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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 1 of 6

Complete if Known

Application Number	09/608,129
Filing Date	June 30, 2000
First Named Inventor	Evan F. Wies, et al.
Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned
Attorney Docket Number	IMM104

U.S. PATENT DOCUMENTS

Examiner	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number Kind Code ² (if known)			
✓	1	3,157,853	11/17/1964	Hirsch	
✓	2	3,220,121	11/30/1965	Cutler	
✓	3	3,497,668	2/24/1970	Hirsch	
✓	4	3,517,446	6/30/1970	Corlyon et al.	
✓	5	3,902,687	6/25/1973	Hightower	
✓	6	3,903,614	9/9/1975	Diamond et al.	
✓	7	4,160,508	7/10/1979	Salsbury	
✓	8	4,236,325	10/2/1980	Hall et al.	
✓	9	4,513,235	4/23/1985	Acklam et al.	
✓	10	4,581,491	4/8/1986	Boothroyd	
✓	11	4,599,070	7/8/1986	Hladky et al.	
✓	12	4,708,656	11/24/1987	De Vries et al.	
✓	13	4,713,007	12/15/1987	Alban	
✓	14	4,891,764	1/2/1990	McIntosh	
✓	15	4,930,770	6/5/1990	Baker	
✓	16	4,934,694	6/19/1990	McIntosh	
✓	17	5,019,761	5/28/1991	Kraft	
✓	18	5,022,407	6/11/1991	Horch et al.	
✓	19	5,035,242	7/30/1991	Franklin	
✓	20	5,038,089	8/6/1991	Szakaly	
✓	21	5,078,152	1/7/1992	Bond	
✓	22	5,186,695	2/16/1993	Mangseth et al.	
✓	23	5,240,417	8/31/1993	Smithson et al.	
✓	24	5,271,290	12/21/1993	Fischer	
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✓	26	5,299,810	4/5/1994	Pierce	
✓	27	5,309,140	5/3/1994	Everett	
✓	28	5,334,027	8/2/1994	Wherlock	
✓	29	5,547,382	8/20/1996	Yamasaki	
✓	30	5,212,473	5/18/1993	Louis	
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✓	32	5,690,582	11/25/1997	Ulrich et al.	
✓	33	5,766,016	6/16/1998	Sinclair	
✓	34	5,785,630	7/28/1998	Bobick et al.	
✓	35	6,111,577	8/29/2000	Zilles et al.	
✓	36	6,219,034	4/17/2001	Elbing, et al	

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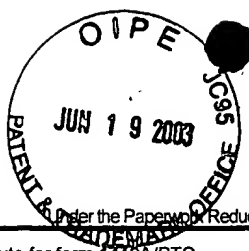
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Sheet **2** of **6**

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Application Number	09/608,129
Filing Date	June 30, 2000
First Named Inventor	Evan F. Wies, et al.
Art Unit	Not Yet Assigned
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<i>W</i>	37	6,422,941	7/23/2002	Thorne et al.	

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)			
<i>W</i>	38	EP	0349086		1/3/1990	Stork Kwant B.V.	✓
<i>W</i>	39	JP	01-003664		7/19/1990	Taito Corporation	✓
<i>W</i>	40	JP	02-109714		1/13/1992	Epoch Co. and Key- Planning Co.	✓
<i>W</i>	41	JP	05-193862		1/27/1995	Sega Corporation	✓
<i>W</i>	42	JP	04-007371		8/3/1993	Taito Corporation	✓

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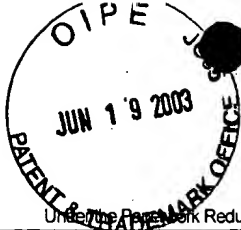
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 3 of 6

Complete if Known

Application Number	09/608,129
Filing Date	June 30, 2000
First Named Inventor	Evan F. Wies, et al.
Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned
Attorney Docket Number	IMM104

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OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

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u	43	ADELSTEIN, "A Virtual Environment System For The Study of Human Arm Tremor," Ph.D. Dissertation, Dept. of Mechanical Engineering, MIT, June 1989.	
u	44	ADELSTEIN, "Design and Implementation of a Force Reflecting Manipulandum for Manual Control research," DSC-Vol. 42, Advances in Robotics, Edited by H. Kazerooni, pp. 1-12, 1992.	
u	45	AUKSTAKALNIS et al., "Silicon Mirage: The Art and Science of Virtual Reality," ISBN 0-938151-82-7, pp. 129-180, 1992.	
u	46	BAIGRIE, "Electric Control Loading - A Low Cost, High Performance Alternative," Proceedings, pp. 247-254, November 6-8, 1990.	
u	47	BEJCZY et al., "Kinesthetic Coupling Between Operator and Remote Manipulator," International Computer Technology Conference, The American Society of Mechanical Engineers, San Francisco, CA, August 12-15, 1980.	
u	48	BEJCZY, "Sensors, Controls, and Man-Machine Interface for Advanced Teleoperation," Science, Vol. 208, No. 4450, pp. 1327-1335, 1980.	
u	49	BEJCZY, "Generalization of Bilateral Force-Reflecting Control of Manipulators," Proceedings Of Fourth CISM-IFTOMM, Sep. 8-12, 1981.	
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u	51	BEJCZY et al., "A Laboratory Breadboard System For Dual-Arm Teleoperation," SOAR '89 Workshop, JSC, Houston, TX, July 25-27, 1989.	
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u	53	BURDEA et al., "Distributed Virtual Force Feedback, Lecture Notes for Workshop on Force Display in Virtual Environments and its Application to Robotic Teleoperation," 1993 IEEE International Conference on Robotics and Automation, pp. 25-44, 05/02/1993.	
u	54	CALDWELL et al., "Enhanced Tactile Feedback (Tele-Taction) Using a Multi-Functional Sensory System," 1050-4729/93, pp. 955-960, 1993.	
u	55	"Cyberman Technical Specification," Logitech Cyberman SWIFT Supplement, 4/5/1994.	
u	56	EBERHARDT et al., "OMAR - A Haptic display for speech perception by deaf and deaf-blind individuals," IEEE Virtual Reality Annual International Symposium, Seattle, WA, Sep. 18-22, 1993.	

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Signature

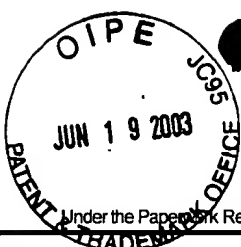
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Sheet 4 of 6

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Application Number	09/608,129
Filing Date	June 30, 2000
First Named Inventor	Evan F. Wies, et al.
Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned
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OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

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u	57	EBERHARDT et al., "Including Dynamic Haptic Perception by The Hand: System Description and Some Results," DSC-Vol. 55-1, Dynamic Systems and Control: Volume 1, ASME 1994.	
u	58	GOBEL et al., "Tactile Feedback Applied to Computer Mice," International Journal of Human-Computer Interaction, Vol. 7, No. 1, pp. 1-24, 1995.	
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u	60	HOWE, "A Force-Reflecting Teleoperated Hand System for the Study of Tactile Sensing in Precision Manipulation," Proceedings of the 1992 IEEE International Conference on Robotics and Automation, Nice, France, May 1992.	
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u	62	IWATA, "Pen-based Haptic Virtual Environment," 0-7803-1363-1/93 IEEE, pp 287-292, 1993.	
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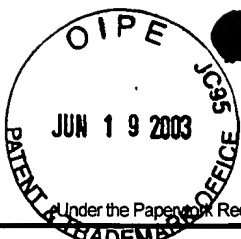
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 5 of 6

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Application Number	09/608,129
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First Named Inventor	Evan F. Wies, et al.
Art Unit	Not Yet Assigned
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u	71	OUIH-YOUNG, " Force Display in Molecular Docking," Order No. 9034744, p. 1-369, 1990.	
u	72	OUIH-YOUNG, "A Low-Cost Force Feedback Joystick and Its Use in PC Video Games," IEEE Transactions on Consumer Electronics, Vol. 41, No. 3, August 1995.	
u	73	OUIH-YOUNG et al., "The Development of A Low-Cost Force Feedback Joystick and Its Use in the Virtual Reality Environment," Proceedings of the Third Pacific Conference on Computer Graphics and Applications, Pacific Graphics '95, Seoul, Korea, 21-24 August 1995.	
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u	75	PIMENTEL et al., "Virtual Reality: through the new looking glass," 2 nd Edition; McGraw-Hill, ISBN 0-07-050167-X, pp. 41-202, 1994.	
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u	77	RUSSO, "The Design and Implementation of a Three Degree of Freedom Force Output Joystick," MIT Libraries Archives 08/14/1990, pp. 1-131, May 1990.	
u	78	RUSSO, " Controlling Dissipative Magnetic Particle Brakes in Force Reflective Devices," DSC-Vol. 42, Advances in Robotics, pp. 63-70, ASME 1992.	
u	79	SCANNELL, "Taking a Joystick Ride," Computer Currents, Boston Edition, Vol. 9, No. 11, November 1994.	
u	80	SHIMOGA, "Finger Force and Touch Feedback Issues in Dexterous Telemanipulation," Proceedings of Fourth Annual Conference on Intelligent Robotic Systems for Space Exploration, Rensselaer Polytechnic Institute, Sep. 30 - Oct. 1, 1992.	
u	81	SNOW et al., " Model-X Force-Reflecting-Hand-Controller," NT Control No. MPO-17851; JPL Case No. 5348, pp. 1-4, 06/15/1989.	
u	82	STANLEY et al., " Computer Simulation of Interacting Dynamic Mechanical Systems Using Distributed Memory Parallel Processors," DSC-Vol. 42, Advances in Robotics, pp. 55-61, ASME 1992.	
u	83	TADROS, " Control System Design for a Three Degree of Freedom Virtual Environment Simulator Using Motor/Brake Pair Actuators", MIT Archive © Massachusetts Institute of Technology, pp. 1-88, February 1990.	
u	84	TERRY et al., "Tactile Feedback In A Computer Mouse," Proceedings of Fouteenth Annual Northeast Bioengineering Conference, University of New Hampshire, March 10-11, 1988.	

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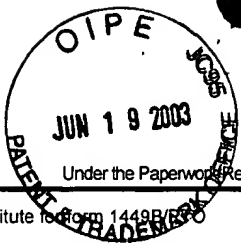
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th	85	YAMAKITA et al., "Tele-Virtual Reality of Dynamic Mechanical Model," Proceedings of the 1992 IEEE/RSJ International Conference on Intelligent Robots and Systems, Raleigh, NC, July 7-10, 1992.	

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